HIdROS

YOUR AIR, OUR PASSION

PRECISION AIR CONDITIONERS 2015

HEAT PUMP SYSTEMS DEHUMIDIFIERS WATER CHILLERS CLOSE CONTROL

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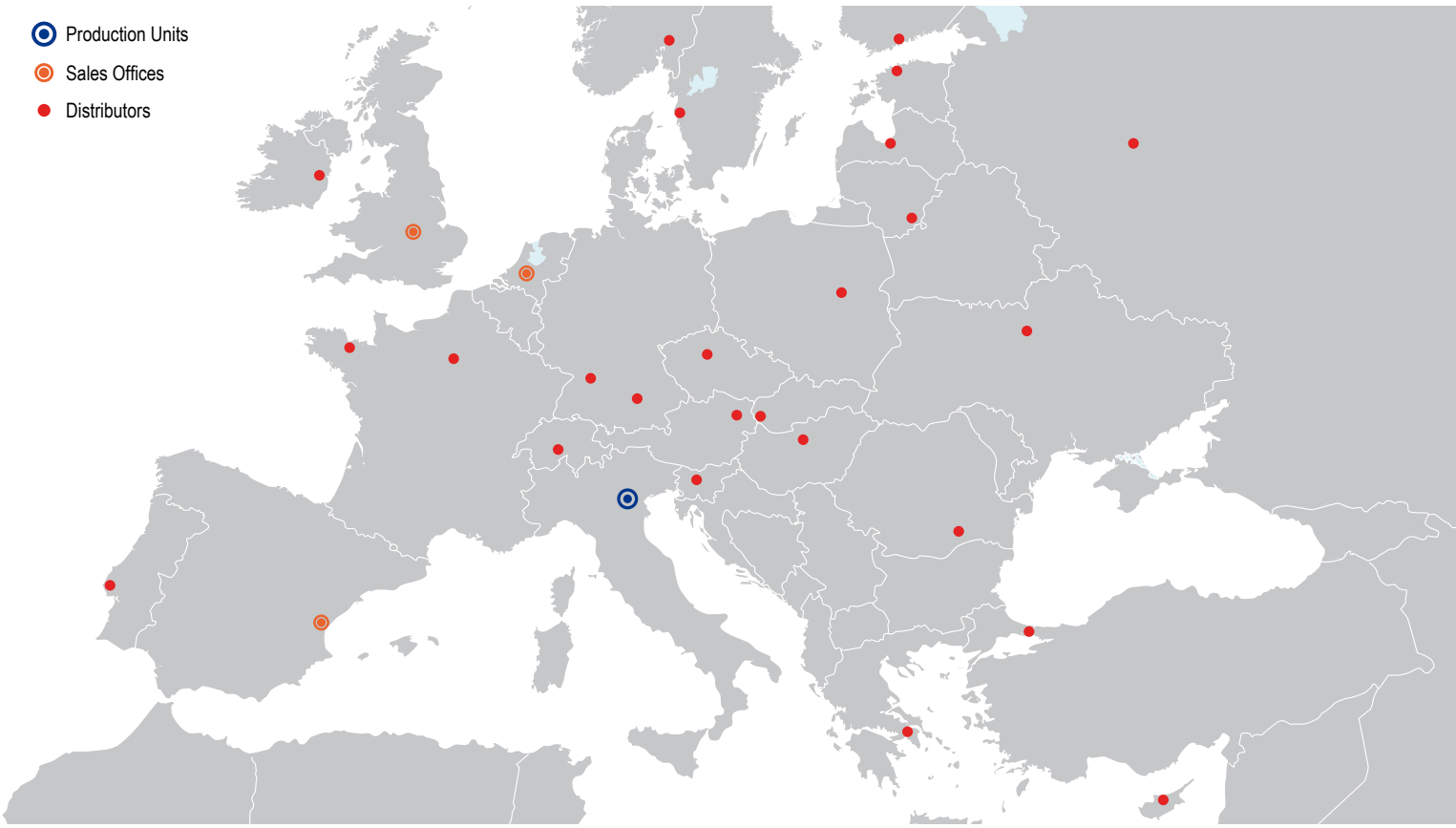
The Company

HIdROS was born in 1993 as a distribution company operating in the field of humidification and dehumidification of the air conditioning market. The expansion has been rapid and, in 2001, the company has decided to start the production plant to make products of their design. Since then, the company has also added the water coolers and heat pumps, to its product range.

Today HIdROS with his staff designs, develops and tests heat pumps, dehumidifiers and water coolers with capacities from 25 to 3000 l / 24h and from 5 to 1200 kW, with a wide range of products tailored to meet any of the customer.

HIdROS headquarters is located in Piove di Sacco (PD) and has a covered area of 6.000 square meters. The property features 4 independent production lines, performs comprehensive tests on systems with two calorimetric chambers operating according to European standards EN. Competence, quality, flexibility and enthusiasm are the other essential elements to provide quick responses with appropriate engineering solutions.

Where we are



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What is a precision air conditioners?

The precision air conditioners, also known as CCU (close control units) or CRAC (computer room air conditioner) are refrigerating equipment specifically designed to provide precise control of temperature and humidity in all applications where cooling load and a very high degree of precision are required.

The precision air conditioners are used in data centers, where cooling loads required can vary from 5 to 20 kW, local servers, laboratories and many other industrial applications.
The precision air conditioners are designed and built using Hidros components from leading international companies, using environmentally friendly refrigerants and characterized by high flexibility.
All products are also compliant with the European directive ErP2015.

Configurations

U - Downflow unit

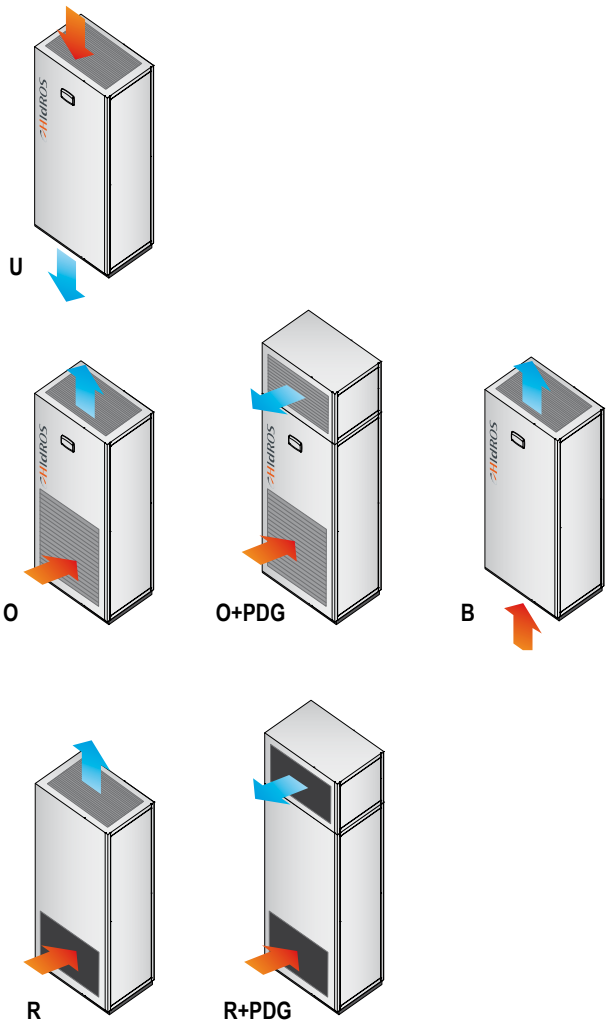
These units have suction from the top and discharge from the bottom. These are normally installed in raised floors,to constitute the plenum for distribution through the ambient.

O / B - Upflow unit

These units have air discharge upwards, normally connected to distribution channels or a false ceiling. The most common type is that with air return at the front of the unit (O), but versions are also available with air return from the base of the conditioner (B). Among the available accessories, there is a plenum for air diffusion into environment, with grille with double order finsand with available opening also on 2 or 3 sides.

R - Upflow units with rear return

These units have air discharge upwards, normally connected to distribution channels or a false ceiling.The unit, normally placed outside the area to be conditioned, requires air return at the rear, to take the air from the ambient.



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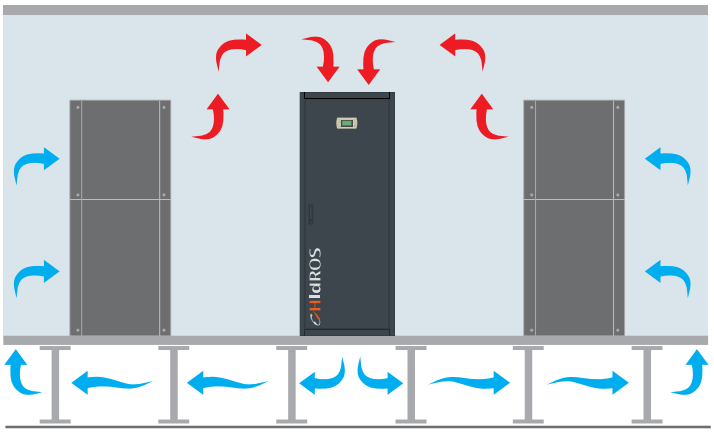

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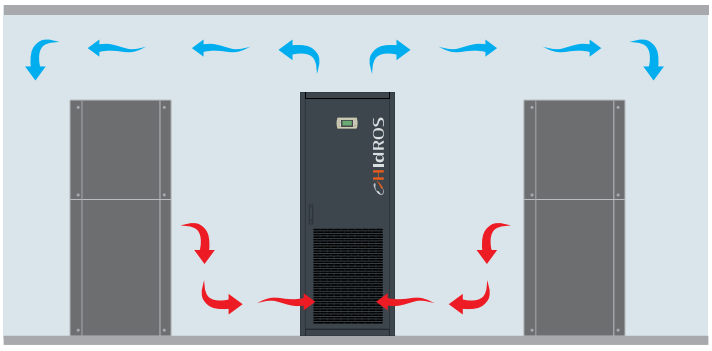


Main components

Compressor

- SCROLL type, for quieter operation and a long-term reliability
- Starting capacity in any loading condition of the system, without starting devices
- Easy interventions of sevices and maintenance thanks to a simple design, lightweight and compact size
- Designed for high performances, with refrigerant R410a

Immersed electrodes humidifier (accessory)

- Hydraulics and control separate, freedom of installation in confined spaces
- AFS system (Anti Foaming System): detects and manages the foam to prevent the emission of droplets together with the steam
- Cylinders with galvanized electrodes and anti-scale filter on the bottom
- Steam production with continuous modulation, from 20% at nominal flow rate
- Conductivity sensor and integrated control software to optimize energy efficiency and maintenance costs, with constant performance over the life of the cylinder
- Automatic drain water, after 3 days of inactivity

EEV - Electronic Expansion Valve (accessory)

- Increased energy savings
- Ease of use and better performance
- Reduced environmental impact

Condensate pump (accessory)

- Low noise level: <20dBA
- maximum reliability
- high flow
- High energy savings

© Sauermann

Fan

- Perfectly matched components (controller/motor/impeller)
- High efficiency with improved ventilation technology and new EC motors
- Significantly reduced rotation noise
- EC fans with speed levels continuously adjustable
- Extremely quiet running with optimised impeller
- Severe design and maintenance-free operation
- Fulfils ERP specifications

DXA

Direct expansion air condensation

The air conditioners belonging to the DXA series direct expansion air condensation, have been specifically designed and manufactured for close control air conditioning where the handling of almost exclusively sensible heat loads is a fundamental requirement and where is not present a central chilled water plant.
The typical applications are high-performance computer rooms, internet data center, digital telephone exchanges, switch rooms, weather stations, medical laboratories, archives, museums as well as any other application both of small or large dimension, where the sensible heat load must be dissipated and is possible also regulate ambient humidity (optional).
The sizing of EC fans, Electonically Commutated the latest "Plug-In" and the exchange surfaces, allows the containment of emissions noise and electronic .
The units are designed to present the smallest footprint possible, reducing the cost of the occupied floor space, and full frontal access for easy inspection and service.
The DXA units have compressor on board; the heat from the technical room is dissipated by an external finned coil condenser, connected during installation.

VERSIONS

- **C00:** Only Cooling, base version, only cooling coil without humidification and dehumidification.
- **C0D:** Cooling and Dehumidification with electrical heater post heating, no humidification.
- **CH0:** Cooling and Humidification by non-pressurised steam humidifier by means of electrodes immersed.
- **CHD:** Cooling/Humidification/Dehumidification with electrical heater post heating, and non-pressurised steam humidifier by means of electrodes immersed .

Model		061	071	091	111	141	161	191	211	261	321	401	501
Total cooling capacity (1)	kW	6,4	7,5	9,3	11,6	14,7	16,5	19,6	22,5	25,8	33,8	37,5	45,6
Sensible cooling capacity (1)	kW	5,6	7,2	8,1	9,6	11,7	14,2	16,6	19,0	21,3	28,1	30,8	37,7
SHR		0,87	0,96	0,87	0,83	0,79	0,86	0,85	0,84	0,83	0,83	0,82	0,83
Max power input compressor	kW	1,5	1,9	2,3	2,9	3,8	3,9	4,5	5,2	5,7	7,3	8,2	9,5
Max current input	A	10,4	13,4	16,2	7,9	9,7	10,1	15,0	15,0	16,0	22,0	25,0	31,0
Peak current	A	43,0	62,0	64,0	48,0	63,0	63,0	75,0	101,0	95,0	118,0	118,0	140,0
Nominal air flow	m³/h	1800	2050	2600	2800	3300	4500	4700	5400	6100	8500	8300	11300
Fans	n°xkW	1x0,13	1x0,16	1x0,26	1x0,32	1x0,23	1x0,33	1x0,41	1x0,70	1x0,68	1x1,48	2x0,42	2x0,70
Nominal pressure drop	Pa	150	150	120	100	250	250	250	250	250	250	250	250
Type of compressor		Rotative			Hermetic scroll								
N. compressors / N. Circuit		1 / 1	1 / 1	1 / 1	1 / 1	1 / 1	1 / 1	1 / 1	1 / 1	1 / 1	1/1	1/1	1/1
Power supply		230V/1N/50Hz			400/3N/50	400V/3/50Hz							
Humidifier nominal capacity (2)	kg/h	1,5	1,5	3	3	5	5	5	5	5	5	5	5
Heat.capacity of electrical heaters	kW	1,5	1,5	1,5	1,5	5,0	5,0	5,0	5,0	5,0	5,0	10,0	10,0
SPL indoor unit "Under"(3)	dB(A)	54	57	62	64	50	56	57	59	62	68	57	60
SPL indoor unit "Over" (3)	dB(A)	57	60	65	67	52	59	60	62	65	72	60	63
HRA (Standard)		S070	S070	S090	S110	S160	S160	S210	S210	L260	L320	L450	L450
SPL outdoor unit STD (4)	dB(A)	43	43	43	46	46	46	43	43	46	46	46	48
HRA/LS (Low noise)		S060	S070	S090	S110	S160	S160	S210	S210	L260	L400	L400	L450
SPL outdoor unit LS (4)	dB(A)	33	33	36	29	32	32	32	32	39	39	39	41

Model		262	322	402	452	482	582	652	752	902	1002
Total cooling capacity (1)	kW	30,5	33,1	39,3	46,0	50,0	57,7	67,0	75,0	89,6	99,4
Sensible cooling capacity (1)	kW	25,5	28,7	32,6	39,4	42,0	49,0	56,2	63,2	74,0	81,4
SHR		0,84	0,87	0,83	0,86	0,84	0,85	0,84	0,84	0,83	0,82
Max power input compressor	kW	6,6	7,7	9,1	10,3	11,3	12,7	14,6	16,5	18,9	22,2
Max current input	A	20,6	23,6	30,0	30,0	32,0	42,0	44,0	50,0	62,0	68,0
Peak current	A	103,0	128,0	150,0	202,0	190,0	222,0	236,0	236,0	280,0	348,0
Nominal air flow	m³/h	7200	8200	8900	11500	11900	14500	16100	17300	21100	22000
Fans	n° xkW	1x0,91	1x1,32	2x0,31	2x0,74	2x0,86	2x1,01	2x1,41	2x1,23	3x1,06	3x1,22
Nominal pressure drop	Pa	250	250	250	250	250	250	250	250	250	250
Type of compressor		Hermetic scroll									
N. compressors / N. Circuit		2 / 1	2 / 1	2 / 1	2 / 1	2 / 1	2 / 2	2 / 2	2 / 2	2 / 2	2 / 2
Power supply		400V/3/50Hz									
Humidifier nominal capacity (2)	kg/h	5	5	5	5	8	8	8	8	8	8
Heat.capacity of electrical heaters	kW	5,0	5,0	10,0	10,0	10,0	10,0	10,0	15,0	15,0	15,0
SPL indoor unit "Under"(3)	dB(A)	66	68	58	64	65	69	71	72	72	73
SPL indoor unit "Over" (3)	dB(A)	69	71	61	67	68	72	74	75	75	76
HRA (Standard)		L260	L320	L450	L480	L480	2xL260	2xL320	2xL450	2xL450	2xL480
SPL outdoor unit STD (4)	dB(A)	46	46	46	48	48	2x46	2x46	2x46	2x46	2x48
HRA/LS (Low noise)		L260	L400	L400	L450	L480	2xL260	2xL400	2xL400	2xL450	2xL480
SPL outdoor unit LS (4)	dB(A)	39	39	39	41	41	2x39	2x39	2x39	2x41	2x41

Performance refer to the following conditions:
(1) 24°C db 17,1°C wb; 50% R.H. - 45°C condensing
(2) When water conducibility is between 350-750 uS/cm³

(3) Sound pressure level at 1 mt in free field
(4) Sound pressure level at 10 mt in free field (EN13487)

DXA

FRAME
Frame in galvanized steel sheet with vertical rods and external panels painted with epoxy powder black gray colour RAL 7021. Fixing screws in galvanized steel. Doors are mounted on hingers and equipped with easy to open lock with key. Insulation acoustically and thermally, in open-cell polyurethane, class 1 self-extinguishing anti dripping (UL94-HF1), density of 25 Kg/m3 and thermal conductivity of 0,035 W/Mk at 10°C, insulation thickness of 20mm.

COMPRESSORS
The compressors utilised are scroll type. All compressors are fitted with a crankcase heater and each compressor has a klixon embedded in the motor winding for thermal overload protection. They are mounted in a separate compartment within the casing in order to isolate them from the condenser air stream. The crankcase heater is always energised when the compressor is in stand-by. Access to the compressor compartment is by removal of a front panel and, because they are isolated from the main airstream, maintenance of the compressors is possible whilst the unit is operating.
The compressors used are all in tandem configuration. This results in much higher efficiencies at part loads compared to units with independent refrigerant circuits.

FINNED PACK COOLING COIL
In copper-aluminium with large front surface to reduce air transit speed. The copper tubes mechanically expanded into aluminium fins to increase the heat exchange factor. All the units are equipped with a drip tray in stainless steel.

SUPPLY FAN
It is a high performance electrically commutated (EC) plug fan, backward aerofoil blades, directly coupled to the electric motor. The electric motor is a high efficiency DC brushless type with external rotor, to guarantee an ideal cooling of the windings and the absence of power lost due to pulleys and belt transmission. The fan is statically and dynamically balanced class 6.3 according to ISO1940. The electric motor has a separate electronic commuter (driver). Serial interface card with modbus protocol RTU.

FILTERS
Standard efficency class G4, various options are available for filters with higher efficiency levels.

REFRIGERATING CIRCUIT
In conformity with the PED directive, complete with thermostatic expansion valve, filter, liquid gauge, solenoid valve, liquid receiver, safety valve and high and low pressure switches.

ELECTRICAL PANEL
With main interlocking switch and phase sequence relay. The secondary circuit is powered at low voltage of 24 Vac.

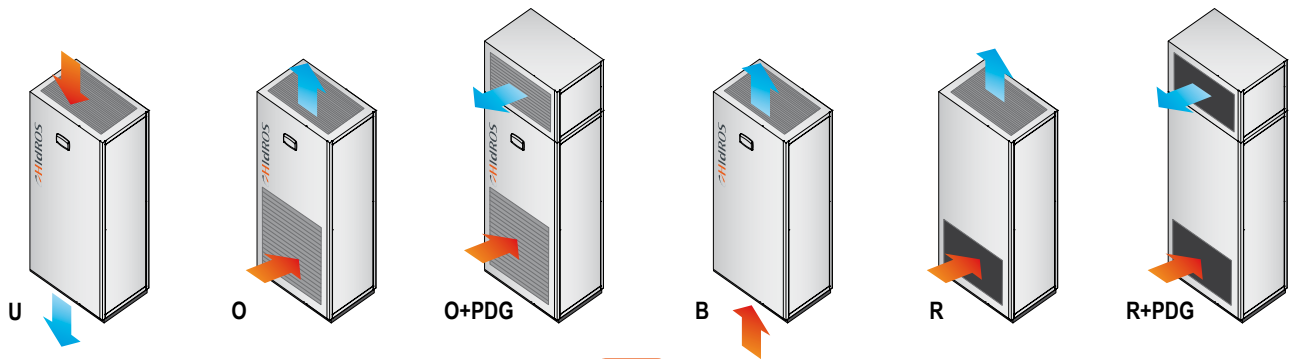
MICROPROCESSOR
Each unit of the DATA CENTER series is equipped with an advanced control, a microprocessor at 16 bit and a FLASH memory to guarantee high speed software performance and the possibility of managing multi-language configuration masks and different serial communication protocols. All the electronic boards can be connected to a local network named pLAN (Local Area Network) that is able to manage 8 units at most. (For more information, see the control service manual). Also, the management of a electronic expansion valve (EEV) is available.

USER INTERFACE
Display the unit conditions, status and operating parameters, with the following characteristics: isplay of room temperature and temperature set-point for supply air, display of operating parameters, control keyboard with two levels of "menù" under "password", alarm reset and unit set-up, on/off safety switch, watchdog function.

CONTROL AND PROTECTION DEVICES
All units are supplied with the following control and protection devices: high pressure switch with manual reset, low pressure switch with automatic reset, high pressure safety valve, compressor thermal overload protection, fans thermal overload protection, probe, air electrical temperature and humidity (option).

AIR COOLED CONDENSER WHIT FANS SPEED REGULATOR
Frame Self-bearing, in embossed aluminium, that provides optimal mechanical characteristics and corrosion resistance. Heat exchangers finned coils, manufactured with copper tubes, arranged in staggered lines, with aluminium fins which provide a high heat exchanger surface. Helicoidal fans, low rotational speed, directly coupled, with IP 54 protection degree, thermal protection and accident prevention grate; standard version (STD). The shaped nozzle and the blade profile increase the efficiency and reduce the noise level. Low-noise version (LSR) available. Power supply electrical board 230/1N, with master circuit breaker and speed regulator, for packaged condensation control.

CONFIGURATIONS

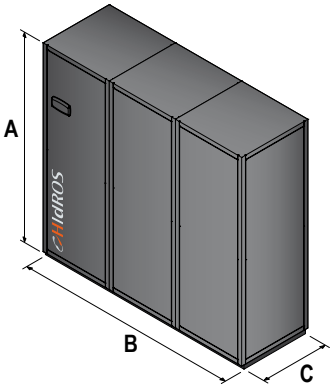


DXA

Description	Code	
Dirty filter alarm	DFA	o
Flooding alarm	FAA	o
Smoke/Fire alarm	SFA	o
Power failure alarm	PFA	o
Water coil + 3-way valve	WCV	o
Capacity step control (hot gas by-pass)	HBP	o
Continuous capacity control (hot gas by-pass + liquid injection)	HBI	o
Sound-insulation caps on compressors	SIC	o
High/low refrigerating pressure gauges	HLM	o
Electronic thermostatic valve	EEV	o
Plenum for air diffusion into environment, with grille (for O/B/R versions only)	PDG	o
Base frame, height adjustable H=300/500 ±25 mm (for U version only)	BFX	o
Base frame, with deflector and height adjustable H=300/500 ±25 mm (for U version only)	BDX	o
Non return air gate, motor-driven (for U version only)	NRG	o
Overpressure type non return air gate (for O/B/R versions only)	ONG	o
RS485 type serial board	SB5	o
Remote control panel	RCP	o
Alarm log clock board	ACB	o
Air discharge temperature sensor	OTS	o
Filter section with F5 grade (according to EN 779)	FF5	o
Filter section with F7 grade (according to EN 779)	FF7	o
2-way pressure valve for tower water	2VT	-
3-way pressure valve for tower water	3VT	-
Combination with HRA - Standard	HRA	o
Combination with HRA/LS - Low noise version	HRA/LS	o

● Standard, o Optional, – Not available

DXA



Mod.	A	B	C	Kg	HRA DxExF	Kg	HRA/LS DxExF	Kg
061	1750	670	500	140	555x780x362	19,4	555x780x362	19,4
071	1750	670	500	170	555x780x362	19,4	555x780x362	20,8
091	1750	670	500	180	555x780x362	20,8	555x1380x362	34,0
111	1750	670	500	210	555x1380x362	34,0	828x1115x470	46,4
141	1980	770	650	230	555x1380x362	39,0	828x2015x470	76,0
161	1980	770	650	270	555x1380x362	39,0	828x2015x470	76,0
191	1980	770	650	310	828x1105x428	46,6	828x2015x470	85,3
211	1980	770	650	340	828x1105x428	46,6	828x2015x470	85,3
261	1980	1280	890	380	828x2005x428	76,0	1034x2261x750	150,0
321	1980	1280	890	470	828x2005x428	85,3	1034x2261x750	162,0
401	1980	1680	890	570	828x2005x428	93,2	1034x2261x750	162,0
501	1980	1680	890	640	828x2005x428	93,2	1034x3261x750	221,0
262	1980	1280	890	400	828x2005x428	76,0	1034x2261x750	150,0
322	1980	1280	890	460	828x2005x428	85,3	1034x2261x750	162,0
402	1980	1680	890	540	828x2005x428	93,2	1034x2261x750	162,0
452	1980	1680	890	580	828x2905x428	123,4	1034x3261x750	221,0
482	1980	1680	890	620	828x2905x428	123,4	1034x3261x750	238,0
582	1980	2060	890	660	828x2005x428	76,0	1034x2261x750	150,0
652	1980	2060	890	790	828x2005x428	85,3	1034x2261x750	162,0
752	1980	2580	890	920	828x2005x428	93,2	1034x2261x750	162,0
902	1980	2580	890	970	828x2005x428	93,2	1034x3261x750	221,0
1002	1980	2580	890	1010	828x2905x428	123,4	1034x3261x750	238,0

DXW

Direct expansion water condensation

The air conditioners belonging to the DXW series direct expansion air condensation, have been specifically designed and manufactured for close control air conditioning where the handling of almost exclusively sensible heat loads is a fundamental requirement and where is not present a central chilled water plant.
The typical applications are high-performance computer rooms, internet data center, digital telephone exchanges, switch rooms, weather stations, medical laboratories, archives, museums as well as any other application both of small or large dimension, where the sensible heat load must be dissipated and is possible also regulate ambient humidity (optional).
The sizing of EC fans, Electonically Commutated the latest "Plug-In" and the exchange surfaces, allows the containment of emissions noise and electronic. The units are designed to present the smallest footprint possible, reducing the cost of the occupied floor space, and full frontal access for easy inspection and service.
The DXA units have compressor on board; the heat from the technical room is dissipated by an external finned coil condenser, connected during installation. In comparison to DXA set-up, these units have the advantage that the refrigerant circuit is realized in factory and pre-charged with refrigerant, not needing the laying of refrigerant lines.

VERSIONS

- **C00:** Only Cooling, base version, only cooling coil without humidification and dehumidification.
- **C0D:** Cooling and Dehumidification with electrical heater post heating, no humidification.
- **CH0:** Cooling and Humidification by non-pressurised steam humidifier by means of electrodes immersed.
- **CHD:** Cooling/Humidification/Dehumidification with electrical heater post heating, and non-pressurised steam humidifier by means of electrodes immersed .

Model		061	071	091	111	141	161	191	211	261	321	401	501
Total cooling capacity (1)	kW	6,4	7,5	9,3	11,6	14,7	16,5	19,6	22,5	25,8	33,8	37,5	45,6
Sensible cooling capacity (1)	kW	5,6	7,2	8,1	9,6	11,7	14,2	16,6	19,0	21,3	28,1	30,8	37,7
SHR		0,87	0,96	0,87	0,83	0,79	0,86	0,85	0,84	0,83	0,83	0,82	0,83
Max power input compressor	kW	1,8	2,1	2,6	2,9	3,8	3,9	4,6	5,4	6,0	8,0	8,8	10,0
Nominal air flow	m³/h	1800	2050	2600	2800	3300	4500	4700	5400	6100	8500	8300	11300
Fans	n°xkW	1x0,13	1x0,16	1x0,26	1x0,32	1x0,23	1x0,33	1x0,41	1x0,70	1x0,68	1x1,48	2x0,42	2x0,70
Nominal pressure drop	Pa	140	140	110	90	250	250	250	250	250	250	250	250
Type of compressor		Rotative			Hermetic scroll								
N. compressors / N. Circuit		1 / 1	1 / 1	1 / 1	1 / 1	1 / 1	1 / 1	1 / 1	1 / 1	1 / 1	1/1	1/1	1/1
Power supply		230V/1N/50Hz			400/3N/50	400V/3/50Hz							
Max power input	A	10,4	13,4	16,2	7,9	9,7	10,1	15,0	15,0	16,0	22,0	25,0	31,0
Max current input	A	43,0	62,0	64,0	48,0	63,0	63,0	75,0	101,0	95,0	118,0	118,0	140,0
Humidifier nominal capacity (2)	kg/h	1,5	1,5	3	3	5	5	5	5	5	5	5	5
Heat.capacity of electrical heaters	kW	1,5	1,5	1,5	1,5	5,0	5,0	5,0	5,0	5,0	5,0	10,0	10,0
Water flow (3)	m³/h	1,45	1,57	1,91	2,49	3,14	3,44	4,26	4,88	5,39	7,20	8,13	9,40
Condenser pressure drop (3)	kPa	31	36	26	45	43	51	31	42	51	51	46	45
SPL indoor unit “Under” (4)	dB(A)	54	57	62	64	50	56	57	59	62	68	57	60
SPL indoor unit “Over” (4)	dB(A)	57	60	65	67	52	59	60	62	65	72	60	63

DXW

Model		262	322	402	452	482	582	652	752	902	1002
Total cooling capacity (1)	kW	30,5	33,1	39,3	46,0	50,0	57,7	67,0	75,0	89,6	99,4
Sensible cooling capacity (1)	kW	25,5	28,7	32,6	39,4	42,0	49,0	56,2	63,2	74,0	81,4
SHR		0,84	0,87	0,83	0,86	0,84	0,85	0,84	0,84	0,83	0,82
Max power input compressor	kW	7,5	7,6	9,2	10,8	11,9	13,9	16,0	17,6	19,9	23,0
Nominal air flow	m³/h	7200	8200	8900	11500	11900	14500	16100	17300	21100	22000
Fans	n°xkW	1x0,91	1x1,32	2x0,31	2x0,74	2x0,86	2x1,01	2x1,41	2x1,23	3x1,06	3x1,22
Nominal pressure drop	Pa	250	250	250	250	250	250	250	250	250	250
Type of compressor		Hermetic scroll									
N. compressors / N. Circuit		2 / 1	2 / 1	2 / 1	2 / 1	2 / 1	2 / 2	2 / 2	2 / 2	2 / 2	2 / 2
Power supply		400V/3/50Hz									
Max power input	A	20,6	23,6	30,0	30,0	32,0	42,0	44,0	50,0	62,0	68,0
Max current input	A	103,0	128,0	150,0	202,0	190,0	222,0	236,0	236,0	280,0	348,0
Humidifier nominal capacity (2)	kg/h	5	5	5	5	8	8	8	8	8	8
Heat.capacity of electrical heaters	kW	5,0	5,0	10,0	10,0	10,0	10,0	10,0	15,0	15,0	15,0
Water flow (3)	m³/h	6,62	7,10	8,51	9,90	10,69	2x6,16	2x7,13	2x7,6	2x8,18	2x10,60
Condenser pressure drop (3)	kPa	43	50	50	50	46	2x37	2x35	2x46	2x44	2x45
SPL indoor unit “Under” (4)	dB(A)	66	68	58	64	65	69	71	72	72	73
SPL indoor unit “Over” (4)	dB(A)	69	71	61	67	68	72	74	75	75	76

Performance refer to the following conditions:

(1) 24°C db 17,1°C wb; 50% R.H. - 45°C condensing

(2) When water conducibility is between 350-750 uS/cm³

(3) Sound pressure level at 1 mt in free field

(4) Sound pressure level at 10 mt in free field (EN13487)

DXW

FRAME
Frame in galvanized steel sheet with vertical rods and external panels painted with epoxy powder black gray colour RAL 7021. Fixing screws in galvanized steel. Doors are mounted on hingers and equipped with easy to open lock with key. Insulation acoustically and thermally, in open-cell polyurethane, class 1 self-extinguishing anti dripping (UL94-HF1), density of 25 Kg/m3 and thermal conductivity of 0,035 W/Mk at 10°C, insulation thickness of 20mm.

COMPRESSORS
The compressors utilised are scroll type. All compressors are fitted with a crankcase heater and each compressor has a klixon embedded in the motor winding for thermal overload protection. They are mounted in a separate compartment within the casing in order to isolate them from the condenser air stream. The crankcase heater is always energised when the compressor is in stand-by. Access to the compressor compartment is by removal of a front panel and, because they are isolated from the main airstream, maintenance of the compressors is possible whilst the unit is operating.
The compressors used are all in tandem configuration. This results in much higher efficiencies at part loads compared to units with independent refrigerant circuits.

FINNED PACK COOLING COIL
In copper-aluminium with large front surface to reduce air transit speed. The copper tubes mechanically expanded into aluminium fins to increase the heat exchange factor. All the units are equipped with a drip tray in stainless steel.

SUPPLY FAN
It is a high performance electrically commutated (EC) plug fan, backward aerofoil blades, directly coupled to the electric motor. The electric motor is a high efficiency DC brushless type with external rotor, to guarantee an ideal cooling of the windings and the absence of power lost due to pulleys and belt transmission. The fan is statically and dynamically balanced class 6.3 according to ISO1940. The electric motor has a separate electronic commuter (driver). Serial interface card with modbus protocol RTU.

FILTERS
Standard efficency class G4, Various options are available for filters with higher efficiency levels.

REFRIGERATING CIRCUIT
In conformity with the PED directive, complete with thermostatic expansion valve, filter, liquid gauge, solenoid valve, liquid receiver, safety valve and high and low pressure switches.

ELECTRICAL PANEL
With main interlocking switch and phase sequence relay. The secondary circuit is powered at low voltage of 24 Vac.

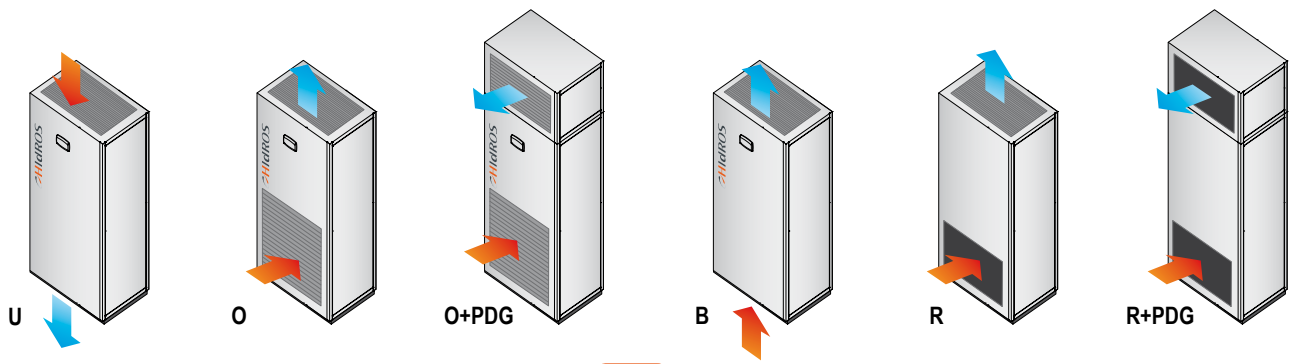
MICROPROCESSOR
Each unit of the DATA CENTER series is equipped with an advanced control, a microprocessor at 16 bit and a FLASH memory to guarantee high speed software performance and the possibility of managing multi-language configuration masks and different serial communication protocols. All the electronic boards can be connected to a local network named pLAN (Local Area Network) that is able to manage 8 units at most. (For more information, see the control service manual). Also, the management of a electronic expansion valve (EEV) is available.

USER INTERFACE
Display the unit conditions, status and operating parameters, with the following characteristics: isplay of room temperature and temperature set-point for supply air, display of operating parameters, control keyboard with two levels of "menù" under "password", alarm reset and unit set-up, on/off safety switch, watchdog function.

CONTROL AND PROTECTION DEVICES
All units are supplied with the following control and protection devices: high pressure switch with manual reset, low pressure switch with automatic reset, high pressure safety valve, compressor thermal overload protection, fans thermal overload protection, probe, air electrical temperature and humidity (option).

WATER COOLED CONDENSERS
Water cooled condensers capacitors are of brazed plate type, made of stainless steel AISI 316 and are factory insulated with closed cell material

CONFIGURATIONS

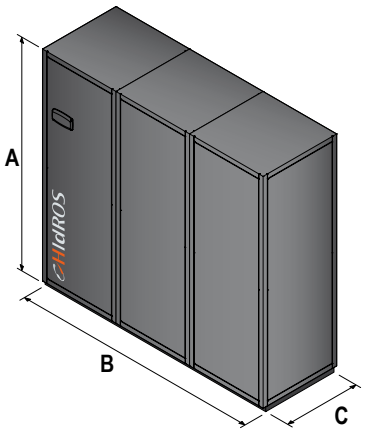


DXW

Description	Code	
Dirty filter alarm	DFA	○
Flooding alarm	FAA	○
Smoke/Fire alarm	SFA	○
Power failure alarm	PFA	○
Water coil + 3-way valve	WCV	○
Capacity step control (hot gas by-pass)	HBP	○
Continuous capacity control (hot gas by-pass + liquid injection)	HBI	○
Sound-insulation caps on compressors	SIC	○
High/low refrigerating pressure gauges	HLM	○
Electronic thermostatic valve	EEV	○
Plenum for air diffusion into environment, with grille (for O/B/R versions only)	PDG	○
External air intake with filter	EAF	○
Base frame, height adjustable H=300/500 ±25 mm (for U version only)	BFX	○
Base frame, with deflector and height adjustable H=300/500 ±25 mm (for U version only)	BDX	○
Non return air gate, motor-driven (for U version only)	NRG	○
Overpressure type non return air gate (for O/B/R versions only)	ONG	○
RS485 type serial board	SB5	○
Remote control panel	RCP	○
Alarm log clock board	ACB	○
Air discharge temperature sensor	OTS	○
Filter section with F5 grade (according to EN 779)	FF5	○
Filter section with F7 grade (according to EN 779)	FF7	○
2-way pressure valve for tower water	2VT	●
3-way pressure valve for tower water	3VT	○

● Standard, ○ Optional, – Not available

DXW



Mod.	A	B	C	Kg
061	1750	670	500	160
071	1750	670	500	190
091	1750	670	500	200
111	1750	670	500	230
141	1980	770	650	250
161	1980	770	650	305
191	1980	770	650	345
211	1980	770	650	375
261	1980	1280	890	420
321	1980	1280	890	510
401	1980	1680	890	610
501	1980	1680	890	680
262	1980	1280	890	440
322	1980	1280	890	550
402	1980	1680	890	580
452	1980	1680	890	620
482	1980	1680	890	660
582	1980	2060	890	710
652	1980	2060	890	840
752	1980	2580	890	970
902	1980	2580	890	1020
1002	1980	2580	890	1060

CW

Chilled Water unit

The air conditioners belonging to the DXW series direct expansion air condensation, have been specifically designed and manufactured for close control air conditioning where the handling of almost exclusively sensible heat loads is a fundamental requirement and where is not present a central chilled water plant.
The typical applications are high-performance computer rooms, internet data center, digital telephone exchanges, switch rooms, weather stations, medical laboratories, archives, museums as well as any other application both of small or large dimension, where the sensible heat load must be dissipated and is possible also regulate ambient humidity (optional).
The sizing of EC fans, Electonically Commutated the latest "Plug-In" and the exchange surfaces, allows the containment of emissions noise and electronic. The units are designed to present the smallest footprint possible, reducing the cost of the occupied floor space, and full frontal access for easy inspection and service.
Units without compressor on board, with a finned coil, fed by refrigerated water, that removes the heat from the technical room. The microprocessor control, with the temperature sensor, allows a precise control, acting on a 3-way modulating valve. Units used in presence of water chillers (also in free-cooling version).

VERSIONS

- **C00:** Only Cooling, base version, only cooling coil without humidification and dehumidification.
- **C0D:** Cooling and Dehumidification with electrical heater post heating, no humidification.
- **CH0:** Cooling and Humidification by non-pressurised steam humidifier by means of electrodes immersed.
- **CHD:** Cooling/Humidification/Dehumidification with electrical heater post heating, and non-pressurised steam humidifier by means of electrodes immersed .

Model		080	100	120	150	200	270	300	400	450	550
Total cooling capacity (1)	kW	8,6	10,5	13,2	16,5	20,7	27,1	33,6	46,5	49,4	56,8
Sensible cooling capacity (1)	kW	7,1	8,7	10,8	15,0	18,2	22,8	29,2	36,6	42,2	47,7
SHR		0,83	0,83	0,82	0,91	0,88	0,84	0,87	0,79	0,85	0,84
Nominal air flow	m^3/h	1700	2500	2800	5000	5500	5400	8500	8600	11600	12000
Fans	n°xkW	1x0,13	1x0,26	1x0,35	1x0,51	1x0,58	1x0,86	1x1,52	1x1,69	2x0,63	2x0,78
Nominal pressure drop	Pa	150	100	60	250	250	250	250	250	250	250
Power supply		230V/1N/50Hz			400V/3/50Hz						
Water flow	m^3/h	1,5	1,8	2,3	2,8	3,6	4,6	5,8	8,0	8,5	9,7
Cooling coil pressure drop	kPa	18,1	33,6	17,4	31,7	25,6	27,5	38,7	32,1	43,3	41,0
Humidifier nominal capacity (2)	kg/h	1,5	1,5	3	5	5	5	5	5	5	5
Heat.capacity of electrical heaters	kW	1,5	1,5	1,5	5,0	5,0	5,0	5,0	5,0	10,0	10,0
SPL indoor unit "Under" (3)	dB(A)	52	60	62	55	57	57	66	66	62	63
SPL indoor unit "Over" (3)	dB(A)	55	62	65	59	60	60	70	70	65	66

Model		600	800	900	1100	1250	1500	1700	2000
Total cooling capacity (1)	kW	61,5	82,1	91,4	117,2	122,6	157,1	173,5	208,1
Sensible cooling capacity (1)	kW	54,7	67,3	79,5	96,1	103,6	128,7	142,3	169,6
SHR		0,89	0,82	0,87	0,82	0,82	0,82	0,82	0,82
Nominal air flow	m^3/h	15500	16000	23000	22000	27400	27400	37000	40000
Fans	n°xkW	2x1,29	2x1,53	3x1,40	3x1,31	3x1,23	3x1,28	4x1,29	4x1,58
Nominal pressure drop	Pa	250	250	250	250	250	250	200	200
Power supply		400V/3/50Hz							
Water flow	m^3/h	10,6	14,1	15,7	20,1	21,0	27,0	29,8	35,7
Cooling coil pressure drop	kPa	37,8	40,3	59,3	49,1	26,1	34,6	51,9	50,0
Humidifier nominal capacity (2)	kg/h	5	5	5	5	8	8	8	8
Heat.capacity of electrical heaters	kW	10,0	10,0	15,0	15,0	15,0	15,0	20,0	20,0
SPL indoor unit "Under" (3)	dB(A)	67	69	72	71	75	76	78	80
SPL indoor unit "Over" (3)	dB(A)	70	72	75	74	79	80	93	85

CW

Performance refer to the following conditions:

(1) 24°C db 17,1°C wb; 50% R.H. - water inlet 7°C, water outlet 12°C

(2) When water conducibility is between 350-750 uS/cm^3

(3) Sound pressure level at 1 mt in free field

CW

FRAME
Frame in galvanized steel sheet with vertical rods and external panels painted with epoxy powder black gray colour RAL 7021. Fixing screws in galvanized steel. Doors are mounted on hingers and equipped with easy to open lock with key. Insulation acoustically and thermally, in open-cell polyurethane, class 1 self-extinguishing anti dripping (UL94-HF1), density of 25 Kg/m3 and thermal conductivity of 0,035 W/Mk at 10°C, insulation thickness of 20mm.

FINNED PACK COOLING COIL
In copper-aluminium with large front surface to reduce air transit speed. The copper tubes mechanically expanded into aluminium fins to increase the heat exchange factor. All the units are equipped with a drip tray in stainless steel.

SUPPLY FAN
It is a high performance electrically commutated (EC) plug fan, backward aerofoil blades, directly coupled to the electric motor. The electric motor is a high efficiency DC brushless type with external rotor, to guarantee an ideal cooling of the windings and the absence of power lost due to pulleys and belt transmission. The fan is statically and dynamically balanced class 6.3 according to ISO1940. The electric motor has a separate electronic commuter (driver). Serial interface card with modbus protocol RTU.

FILTERS
Standard efficency class G4, Various options are available for filters with higher efficiency levels.

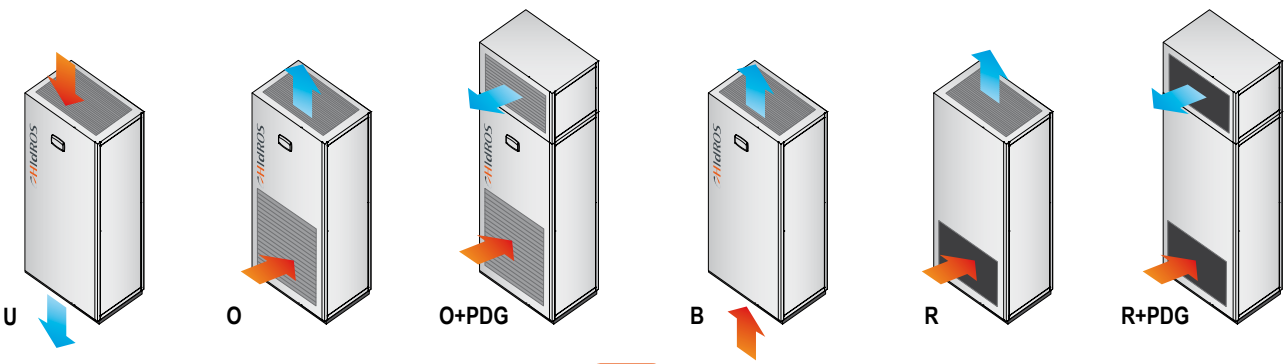
ELECTRICAL PANEL
With main interlocking switch and phase sequence relay. The secondary circuit is powered at low voltage of 24 Vac.

MICROPROCESSOR
Each unit of the DATA CENTER series is equipped with an advanced control, a microprocessor at 16 bit and a FLASH memory to guarantee high speed software performance and the possibility of managing multi-language configuration masks and different serial communication protocols. All the electronic boards can be connected to a local network named pLAN (Local Area Network) that is able to manage 8 units at most. (For more information, see the control service manual). Also, the management of a electronic expansion valve (EEV) is available.

USER INTERFACE
Display the unit conditions, status and operating parameters, with the following characteristics: isplay of room temperature and temperature set-point for supply air, display of operating parameters, control keyboard with two levels of "menù" under "password", alarm reset and unit set-up, on/off safety switch, watchdog function.

CONTROL AND PROTECTION DEVICES
All units are supplied with the following control and protection devices: high pressure switch with manual reset, low pressure switch with automatic reset, high pressure safety valve, compressor thermal overload protection, fans thermal overload protection, probe, air electrical temperature and humidity (option).

CONFIGURATIONS

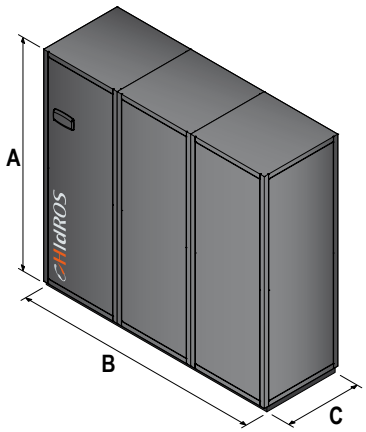


CW

Description	Code	
Dirty filter alarm	DFA	o
Flooding alarm	FAA	o
Smoke/Fire alarm	SFA	o
Power failure alarm	PFA	o
Water coil + 3-way valve	WCV	o
Capacity step control (hot gas by-pass)	HBP	-
Continuous capacity control (hot gas by-pass + liquid injection)	HBI	-
Sound-insulation caps on compressors	SIC	-
High/low refrigerating pressure gauges	HLM	-
Electronic thermostatic valve	EEV	-
Plenum for air diffusion into environment, with grille (for O/B/R versions only)	PDG	o
Base frame, height adjustable H=300/500 ±25 mm (for U version only)	BFX	o
Base frame, with deflector and height adjustable H=300/500 ±25 mm (for U version only)	BDX	o
Non return air gate, motor-driven (for U version only)	NRG	o
Overpressure type non return air gate (for O/B/R versions only)	ONG	o
RS485 type serial board	SB5	o
Remote control panel	RCP	o
Alarm log clock board	ACB	o
Air discharge temperature sensor	OTS	o
Filter section with F5 grade (according to EN 779)	FF5	o
Filter section with F7 grade (according to EN 779)	FF7	o
2-way pressure valve for tower water	2VT	o
3-way pressure valve for tower water	3VT	●

● Standard, o Optional, – Not available

CW



Mod.	A	B	C	Kg
080	1750	670	500	95
100	1750	670	500	95
120	1750	670	500	95
150	1980	770	650	160
200	1980	770	650	160
270	1980	770	650	160
300	1980	960	890	295
400	1980	960	890	295
450	1980	1460	890	380
550	1980	1460	890	380
600	1980	1680	890	480
800	1980	1680	890	480
900	1980	2120	890	650
1100	1980	2120	890	650
1250	1980	2580	890	750
1500	1980	2580	890	750
1700	1980	3600	890	1035
2000	1980	3600	890	1035

DXA-DC

Air-cooled Dual fluid range provides Direct Expansion and Chiller Water technology within the same unit

The air conditioners belonging to the DXA/DC series direct expansion air condensation, have been specifically designed and manufactured for close control air conditioning where the handling of almost exclusively sensible heat loads is a fundamental requirement and where is not present a central chilled water plant.
The typical applications are high-performance computer rooms, internet data center, digital telephone exchanges, switch rooms, weather stations, medical laboratories, archives, museums as well as any other application both of small or large dimension, where the sensible heat load must be dissipated and is possible also regulate ambient humidity (optional).
The sizing of EC fans, Electonically Commutated the latest "Plug-In" and the exchange surfaces, allows the containment of emissions noise and electronic. The units are designed to present the smallest footprint possible, reducing the cost of the occupied floor space, and full frontal access for easy inspection and service.
DXA/DC units are equipped with a dual air cooling system. In standard running, the air cooling is provided by a refrigerated water finned coil; in the case of lacking of refrigerated water, the controller provides for the automatic start of the on board compressor. The heat of the technical room is dissipated through a remote finned coil condenser or through a plate heat exchanger. DXA/DC units, being equipped with a dual air cooling system, assure higher safety of continuous running.

VERSIONS

- **C00:** Only Cooling, base version, only cooling coil without humidification and dehumidification.
- **C0D:** Cooling and Dehumidification with electrical heater post heating, no humidification.
- **CH0:** Cooling and Humidification by non-pressurised steam humidifier by means of electrodes immersed.
- **CHD:** Cooling/Humidification/Dehumidification with electrical heater post heating, and non-pressurised steam humidifier by means of electrodes immersed .

Model		061	071	091	111	141	161	191	211	261	321	401	501
Total cooling capacity (1)	kW	6,4	7,5	9,3	11,6	14,7	16,5	19,6	22,5	25,8	33,8	37,5	45,6
Sensible cooling capacity (1)	kW	5,6	7,2	8,1	9,6	11,7	14,2	16,6	19,0	21,3	28,1	30,8	37,7
SHR		0,87	0,96	0,87	0,83	0,79	0,86	0,85	0,84	0,83	0,83	0,82	0,83
Max power input compressor	kW	1,5	1,9	2,3	2,9	3,8	3,9	4,5	5,2	5,7	7,3	8,2	9,5
Total cooling power DC (2)	kW	8,9	9,8	10,8	11,3	14,4	18,1	18,6	20,5	26,7	33,6	37,8	46,5
Sensible cooling power DC (2)	kW	7,4	8,1	9,0	9,5	12,7	15,9	16,4	18,0	23,3	29,2	32,9	40,9
Nominal air flow	m³/h	1800	2050	2600	2800	3300	4500	4700	5400	6100	8500	8300	11300
Fans	n°xkW	1x0,13	1x0,16	1x0,26	1x0,32	1x0,23	1x0,33	1x0,41	1x0,70	1x0,68	1x1,48	2x0,42	2x0,70
Nominal pressure drop	Pa	130	130	100	80	250	250	250	250	250	250	250	250
Type of compressor		Rotative			Hermetic scroll								
N. compressors / N. Circuit		1 / 1	1 / 1	1 / 1	1 / 1	1 / 1	1 / 1	1 / 1	1 / 1	1 / 1	1/1	1/1	1/1
Power supply		230V/1N/50Hz			400/3N/50	400V/3/50Hz							
Max power input	A	10,4	13,4	16,2	7,9	9,7	10,1	15,0	15,0	16,0	22,0	25,0	31,0
Max current input	A	43,0	62,0	64,0	48,0	63,0	63,0	75,0	101,0	95,0	118,0	118,0	140,0
Humidifier nominal capacity (3)	kg/h	1,5	1,5	3	3	5	5	5	5	5	5	5	5
Heat.capacity of electrical heaters	kW	1,5	1,5	1,5	1,5	5,0	5,0	5,0	5,0	5,0	5,0	10,0	10,0
SPL indoor unit "Under" (4)	dB(A)	54	57	62	64	50	56	57	59	62	68	57	60
SPL indoor unit "Over" (4)	dB(A)	57	60	65	67	52	59	60	62	65	72	60	63
HRA (Standard)		S070	S070	S090	S110	S160	S160	S210	S210	L260	L320	L450	L450
SPL outdoor unit STD (5)	dB(A)	43	43	43	46	46	46	43	43	46	46	46	48
HRA/LS (Silenziato)		S060	S070	S090	S110	S160	S160	S210	S210	L260	L400	L400	L450
SPL outdoor unit LS (5)	dB(A)	33	33	36	29	32	32	32	32	39	39	39	41

Model		262	322	402	452	482	582	652	752	902	1002
Total cooling capacity (1)	kW	30,5	33,1	39,3	46,0	50,0	57,7	67,0	75,0	89,6	99,4
Sensible cooling capacity (1)	kW	25,5	28,7	32,6	39,4	42,0	49,0	56,2	63,2	74,0	81,4
SHR		0,84	0,87	0,83	0,86	0,84	0,85	0,84	0,84	0,83	0,82
Max power input compressor	kW	6,6	7,7	9,1	10,3	11,3	12,7	14,6	16,5	18,9	22,2
Total cooling power DC (2)	kW	30,1	32,9	39,5	47,0	49,3	58,8	67,1	77,7	89,2	97,8
Sensible cooling power DC (2)	kW	26,2	28,6	34,4	41,4	42,9	52,3	59,7	65,2	75,8	82,2
Nominal air flow	m³/h	7200	8200	8900	11500	11900	14500	16100	17300	21100	22000
Fans	n°xkW	1x0,91	1x1,32	2x0,31	2x0,74	2x0,86	2x1,01	2x1,41	2x1,23	3x1,06	3x1,22
Nominal pressure drop	Pa	250	250	250	250	250	250	250	250	250	250
Type of compressor		Hermetic scroll									
N. compressors / N. Circuit		2 / 1	2 / 1	2 / 1	2 / 1	2 / 1	2 / 2	2 / 2	2 / 2	2 / 2	2 / 2
Power supply		400V/3/50Hz									
Max power input	A	20,6	23,6	30,0	30,0	32,0	42,0	44,0	50,0	62,0	68,0
Max current input	A	103,0	128,0	150,0	202,0	190,0	222,0	236,0	236,0	280,0	348,0
Humidifier nominal capacity (3)	kg/h	5	5	5	5	8	8	8	8	8	8
Heat.capacity of electrical heaters	kW	5,0	5,0	10,0	10,0	10,0	10,0	10,0	15,0	15,0	15,0
SPL indoor unit "Under" (4)	dB(A)	66	68	58	64	65	69	71	72	72	73
SPL indoor unit "Over" (4)	dB(A)	69	71	61	67	68	72	74	75	75	76
HRA (Standard)		L260	L320	L450	L480	L480	2XL260	2XL320	2XL450	2XL450	2XL480
SPL outdoor unit STD (5)	dB(A)	46	46	46	48	48	2x46	2x46	2x46	2x46	2x48
HRA/LS (Silenziato)		L260	L400	L400	L450	L480	2XL260	2X L400	2X L400	2X L450	2X L480
SPL outdoor unit LS (5)	dB(A)	39	39	39	41	41	2x39	2x39	2x39	2x41	2x41

Performance refer to the following conditions:
(1) 24°C db 17,1°C wb; 50% R.H. - 45°C condensing
(2) Water temperature: inlet 7°C, outlet 12°C
(3) When water conducibility is between 350-750 uS/cm³
(4) Sound pressure level at 1 mt in free field
(5) Sound pressure level at 10 mt in free field (EN 13487)

DXA-DC

FRAME
Frame in galvanized steel sheet with vertical rods and external panels painted with epoxy powder black gray colour RAL 7021. Fixing screws in galvanized steel. Doors are mounted on hingers and equipped with easy to open lock with key. Insulation acoustically and thermally, in open-cell polyurethane, class 1 self-extinguishing anti dripping (UL94-HF1), density of 25 Kg/m3 and thermal conductivity of 0,035 W/Mk at 10°C, insulation thickness of 20mm.

COMPRESSORS
The compressors utilised are scroll type. All compressors are fitted with a crankcase heater and each compressor has a klixon embedded in the motor winding for thermal overload protection. They are mounted in a separate compartment within the casing in order to isolate them from the condenser air stream. The crankcase heater is always energised when the compressor is in stand-by. Access to the compressor compartment is by removal of a front panel and, because they are isolated from the main airstream, maintenance of the compressors is possible whilst the unit is operating.
The compressors used are all in tandem configuration. This results in much higher efficiencies at part loads compared to units with independent refrigerant circuits.

FINNED PACK COOLING COIL
In copper-aluminium with large front surface to reduce air transit speed. The copper tubes mechanically expanded into aluminium fins to increase the heat exchange factor. All the units are equipped with a drip tray in stainless steel.

SUPPLY FAN
It is a high performance electrically commutated (EC) plug fan, backward aerofoil blades, directly coupled to the electric motor. The electric motor is a high efficiency DC brushless type with external rotor, to guarantee an ideal cooling of the windings and the absence of power lost due to pulleys and belt transmission. The fan is statically and dynamically balanced class 6.3 according to ISO1940. The electric motor has a separate electronic commuter (driver). Serial interface card with modbus protocol RTU.

FILTERS
Standard efficency class G4, Various options are available for filters with higher efficiency levels.

REFRIGERATING CIRCUIT
In conformity with the PED directive, complete with thermostatic expansion valve, filter, liquid gauge, solenoid valve, liquid receiver, safety valve and high and low pressure switches.

ELECTRICAL PANEL
With main interlocking switch and phase sequence relay. The secondary circuit is powered at low voltage of 24 Vac.

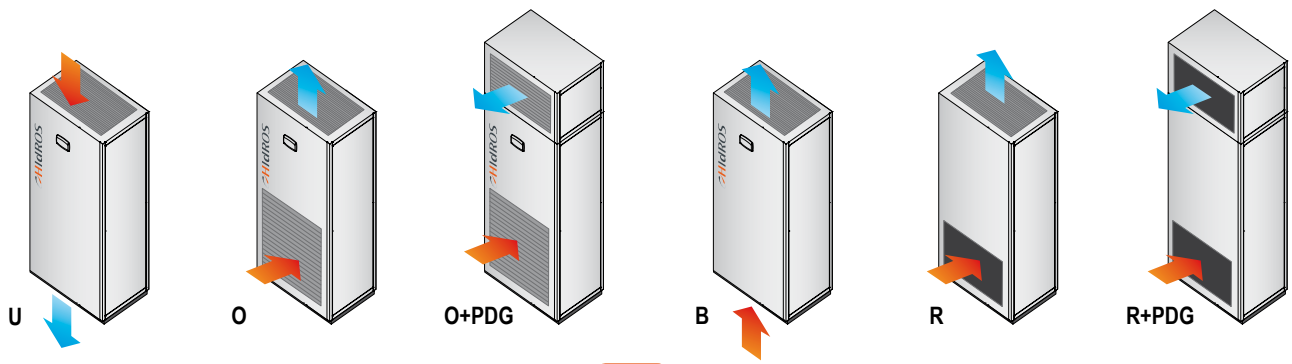
MICROPROCESSOR
Each unit of the DATA CENTER series is equipped with an advanced control, a microprocessor at 16 bit and a FLASH memory to guarantee high speed software performance and the possibility of managing multi-language configuration masks and different serial communication protocols. All the electronic boards can be connected to a local network named pLAN (Local Area Network) that is able to manage 8 units at most. (For more information, see the control service manual). Also, the management of a electronic expansion valve (EEV) is available.

USER INTERFACE
Display the unit conditions, status and operating parameters, with the following characteristics: isplay of room temperature and temperature set-point for supply air, display of operating parameters, control keyboard with two levels of "menù" under "password", alarm reset and unit set-up, on/off safety switch, watchdog function.

CONTROL AND PROTECTION DEVICES
All units are supplied with the following control and protection devices: high pressure switch with manual reset, low pressure switch with automatic reset, high pressure safety valve, compressor thermal overload protection, fans thermal overload protection, probe, air electrical temperature and humidity (option).

AIR COOLED CONDENSER WHIT FANS SPEED REGULATOR
Frame Self-bearing, in embossed aluminium, that provides optimal mechanical characteristics and corrosion resistance. Heat exchangers finned coils, manufactured with copper tubes, arranged in staggered lines, with aluminium fins which provide a high heat exchanger surface. Helicoidal fans, low rotational speed, directly coupled, with IP 54 protection degree, thermal protection and accident prevention grate; standard version (STD). The shaped nozzle and the blade profile increase the efficiency and reduce the noise level. Low-noise version (LSR) available. Power supply electrical board 230/1N, with master circuit breaker and speed regulator, for packaged condensation control.

CONFIGURATIONS

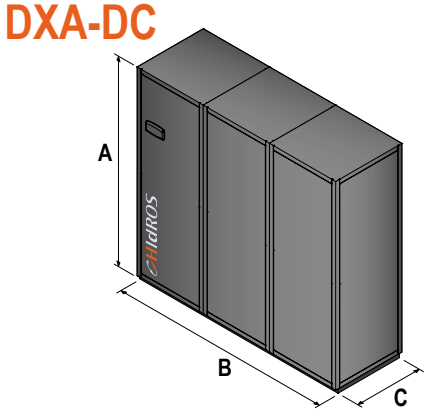


DXA-DC

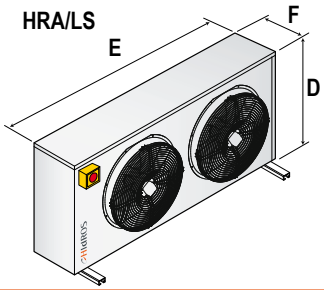
Description	Code	
Dirty filter alarm	DFA	○
Flooding alarm	FAA	○
Smoke/Fire alarm	SFA	○
Power failure alarm	PFA	○
Water coil + 3-way valve	WCV	○
Capacity step control (hot gas by-pass)	HBP	○
Continuous capacity control (hot gas by-pass + liquid injection)	HBI	○
Sound-insulation caps on compressors	SIC	○
High/low refrigerating pressure gauges	HLM	○
Electronic thermostatic valve	EEV	○
Plenum for air diffusion into environment, with grille (for O/B/R versions only)	PDG	○
Base frame, height adjustable H=300/500 ±25 mm (for U version only)	BFX	○
Base frame, with deflector and height adjustable H=300/500 ±25 mm (for U version only)	BDX	○
Non return air gate, motor-driven (for U version only)	NRG	○
Overpressure type non return air gate (for O/B/R versions only)	ONG	○
RS485 type serial board	SB5	○
Remote control panel	RCP	○
Alarm log clock board	ACB	○
Air discharge temperature sensor	OTS	○
Filter section with F5 grade (according to EN 779)	FF5	○
Filter section with F7 grade (according to EN 779)	FF7	○
2-way pressure valve for tower water	2VT	●
3-way pressure valve for tower water	3VT	○
Abbinamento con HRA - Standard	HRA	○
Abbinamento con HRA/LS - Silenziato	HRA/LS	○

● Standard, ○ Optional, – Not available

DXA-DC



HRA
HRA/LS



Mod.	A	B	C	Kg	XRA DxExF	Kg	HRA/LS DxExF	Kg
061	1750	670	500	190	555x780x362	19,4	555x780x362	19,4
071	1750	670	500	210	555x780x362	19,4	555x780x362	20,8
091	1750	670	500	220	555x780x362	20,8	555x1380x362	34,0
111	1750	670	500	250	555x1380x362	34,0	828x1115x470	46,4
141	1980	770	650	270	555x1380x362	39,0	828x2015x470	76,0
161	1980	770	650	310	555x1380x362	39,0	828x2015x470	76,0
191	1980	770	650	350	828x1105x428	46,6	828x2015x470	85,3
211	1980	770	650	380	828x1105x428	46,6	828x2015x470	85,3
261	1980	1280	890	440	828x2005x428	76,0	1034x2261x750	150,0
321	1980	1280	890	530	828x2005x428	85,3	1034x2261x750	162,0
401	1980	1680	890	630	828x2005x428	93,2	1034x2261x750	162,0
501	1980	1680	890	700	828x2005x428	93,2	1034x3261x750	221,0
262	1980	1280	890	460	828x2005x428	76,0	1034x2261x750	150,0
322	1980	1280	890	520	828x2005x428	85,3	1034x2261x750	162,0
402	1980	1680	890	600	828x2005x428	93,2	1034x2261x750	162,0
452	1980	1680	890	640	828x2905x428	123,4	1034x3261x750	221,0
482	1980	1680	890	680	828x2905x428	123,4	1034x3261x750	238,0
582	1980	2060	890	735	828x2005x428	76,0	1034x2261x750	150,0
652	1980	2060	890	865	828x2005x428	85,3	1034x2261x750	162,0
752	1980	2580	890	995	828x2005x428	93,2	1034x2261x750	162,0
902	1980	2580	890	1045	828x2005x428	93,2	1034x3261x750	221,0
1002	1980	2580	890	1085	828x2905x428	123,4	1034x3261x750	238,0

DXW-FR

Water-cooled Dual fluid range provides Water cooled and Chiller Water technology within the same unit

The air conditioners belonging to the DXA/DC series direct expansion air condensation, have been specifically designed and manufactured for close control air conditioning where the handling of almost exclusively sensible heat loads is a fundamental requirement and where is not present a central chilled water plant.
The sizing of EC fans, Electonically Commutated the latest "Plug-In" and the exchange surfaces, allows the containment of emissions noise and electronic. The units are designed to present the smallest footprint possible, reducing the cost of the occupied floor space, and full frontal access for easy inspection and service.
These units take advantage of the possibility of heat rejection directly to the outside environment, when the external air temperature is lower than the temperature of the technical room. The higher this temperature difference, the higher the convenience for energy saving. The controller allows an optimal running of the system, as a function of the inside set temperature and the external air temperature. Besides the direct expansion finned coil, these units are equipped of a finned coil, fed by a water-glycol mixture. During summer, a 3-way valve bypasses the water finned coil and the heat rejection is provided by the direct expansion finned coil. As soon as the climate conditions allow it, the 3-way valve opens the passage to the finned coil of the water-glycol mixture, that is cooled down by outside dry-coolers.

VERSIONS

- **C00:** Only Cooling, base version, only cooling coil without humidification and dehumidification.
- **C0D:** Cooling and Dehumidification with electrical heater post heating, no humidification.
- **CH0:** Cooling and Humidification by non-pressurised steam humidifier by means of electrodes immersed.
- **CHD:** Cooling/Humidification/Dehumidification with electrical heater post heating, and non-pressurised steam humidifier by means of electrodes immersed .

Model		061	071	091	111	141	161	191	211	261	321	401	501
Total cooling capacity (1)	kW	6,3	7,4	9,2	11,4	14,5	16,3	19,4	22,3	25,6	33,4	37,1	45,1
Sensible cooling capacity (1)	kW	5,6	7,2	8,1	9,6	11,7	14,2	16,6	19,0	21,2	28,1	30,8	37,7
SHR		0,88	0,97	0,88	0,84	0,80	0,87	0,85	0,85	0,82	0,84	0,83	0,83
Max power input compressor	kW	1,6	1,7	2,0	3,0	3,8	3,9	4,5	5,2	5,7	7,4	8,5	9,3
Total cooling power FR (2)	kW	7,4	8,2	9,2	10,1	11,5	15,1	16,5	18,5	23,1	30,3	32,5	41,6
Sensible cooling power FR (2)	kW	6,2	6,9	8,1	8,8	10,3	13,5	14,5	16,4	19,9	26,5	27,6	35,9
Nominal air flow	m³/h	1800	2050	2600	2800	3300	4500	4700	5400	6100	8500	8300	11300
Fans	n°xkW	1x0,13	1x0,16	1x0,26	1x0,32	1x0,23	1x0,33	1x0,41	1x0,70	1x0,68	1x1,48	2x0,42	2x0,70
Nominal pressure drop	Pa	130	130	100	80	250	250	250	250	250	250	250	250
Type of compressor		Rotative			Hermetic scroll								
N. compressors / N. Circuits		1 / 1	1 / 1	1 / 1	1 / 1	1 / 1	1 / 1	1 / 1	1 / 1	1 / 1	1/1	1/1	1/1
Power supply		230V/1N/50Hz			400/3N/50	400V/3/50Hz							
Max power input	A	10,4	13,4	16,2	7,9	9,7	10,1	15,0	15,0	16,0	22,0	25,0	31,0
Max current input	A	43,0	62,0	64,0	48,0	63,0	63,0	75,0	101,0	95,0	118,0	118,0	140,0
Humidifier nominal capacity (3)	kg/h	1,5	1,5	3	3	5	5	5	5	5	5	5	5
Heat.capacity of electrical heaters	kW	1,5	1,5	1,5	1,5	5,0	5,0	5,0	5,0	5,0	5,0	10,0	10,0
SPL indoor unit "Under" (4)	dB(A)	54	57	62	64	50	56	57	59	62	68	57	60
SPL indoor unit "Over" (4)	dB(A)	57	60	65	67	52	59	60	62	65	72	60	63

Model		262	322	402	452	482	582	652	752	902	1002
Total cooling capacity (1)	kW	30,2	32,8	38,9	45,5	49,4	57,3	66,3	71,2	88,6	98,3
Sensible cooling capacity (1)	kW	25,3	28,5	32,6	39,4	42,0	48,7	56,3	63,2	74,0	81,4
SHR		0,83	0,86	0,83	0,86	0,85	0,84	0,84	0,88	0,83	0,82
Max power input compressor	kW	7,5	7,7	9,1	10,4	11,2	12,7	14,6	16,9	18,7	22,3
Total cooling power FR (2)	kW	26,5	29,5	34,6	42,5	44,0	52,5	59,3	68,2	78,4	86,7
Sensible cooling power FR (2)	kW	23,0	25,7	28,3	35,9	37,7	45,7	50,5	56,5	66,0	71,1
Nominal air flow	m³/h	7200	8200	8900	11500	11900	14500	16100	17300	21100	22000
Fans	n°xkW	1x0,91	1x1,32	2x0,31	2x0,74	2x0,86	2x1,01	2x1,41	2x1,23	3x1,06	3x1,22
Nominal pressure drop	Pa	250	250	250	250	250	250	250	250	250	250
Type of compressor		Hermetic scroll									
N. compressors / N. Circuits		2 / 1	2 / 1	2 / 1	2 / 1	2 / 1	2 / 2	2 / 2	2 / 2	2 / 2	2 / 2
Power supply		400V/3/50Hz									
Max power input	A	20,6	23,6	30,0	30,0	32,0	42,0	44,0	50,0	62,0	68,0
Max current input	A	103,0	128,0	150,0	202,0	190,0	222,0	236,0	236,0	280,0	348,0
Humidifier nominal capacity (3)	kg/h	5	5	5	5	8	8	8	8	8	8
Heat.capacity of electrical heaters	kW	5,0	5,0	10,0	10,0	10,0	10,0	10,0	15,0	15,0	15,0
SPL indoor unit "Under" (4)	dB(A)	66	68	58	64	65	69	71	72	72	73
SPL indoor unit "Over" (4)	dB(A)	69	71	61	67	68	72	74	75	75	76

Performance refer to the following conditions:

(1) 24°C db 17,1°C wb; 50% R.H. - 45°C condensing with glycol 30%.

(2) Glycol 30%, inlet 7°C, outlet 12°C

(3) When water conducibility is between 350-750 uS/cm³

(4) Sound pressure level at 1 mt in free field

DXW-FR

FRAME
Frame in galvanized steel sheet with vertical rods and external panels painted with epoxy powder black gray colour RAL 7021. Fixing screws in galvanized steel. Doors are mounted on hingers and equipped with easy to open lock with key. Insulation acoustically and thermally, in open-cell polyurethane, class 1 self-extinguishing anti dripping (UL94-HF1), density of 25 Kg/m3 and thermal conductivity of 0,035 W/Mk at 10°C, insulation thickness of 20mm.

COMPRESSORS
The compressors utilised are scroll type. All compressors are fitted with a crankcase heater and each compressor has a klixon embedded in the motor winding for thermal overload protection. They are mounted in a separate compartment within the casing in order to isolate them from the condenser air stream. The crankcase heater is always energised when the compressor is in stand-by. Access to the compressor compartment is by removal of a front panel and, because they are isolated from the main airstream, maintenance of the compressors is possible whilst the unit is operating.
The compressors used are all in tandem configuration. This results in much higher efficiencies at part loads compared to units with independent refrigerant circuits.

FINNED PACK COOLING COIL
In copper-aluminium with large front surface to reduce air transit speed. The copper tubes mechanically expanded into aluminium fins to increase the heat exchange factor. All the units are equipped with a drip tray in stainless steel.

It is a high performance electrically commutated (EC) plug fan, backward aerofoil blades, directly coupled to the electric motor. The electric motor is a high efficiency DC brushless type with external rotor, to guarantee an ideal cooling of the windings and the absence of power lost due to pulleys and belt transmission. The fan is statically and dynamically balanced class 6.3 according to ISO1940. The electric motor has a separate electronic commuter (driver). Serial interface card with modbus protocol RTU.

FILTERS
Standard efficency class G4, Various options are available for filters with higher efficiency levels.

REFRIGERATING CIRCUIT
In conformity with the PED directive, complete with thermostatic expansion valve, filter, liquid gauge, solenoid valve, liquid receiver, safety valve and high and low pressure switches.

ELECTRICAL PANEL
With main interlocking switch and phase sequence relay. The secondary circuit is powered at low voltage of 24 Vac.

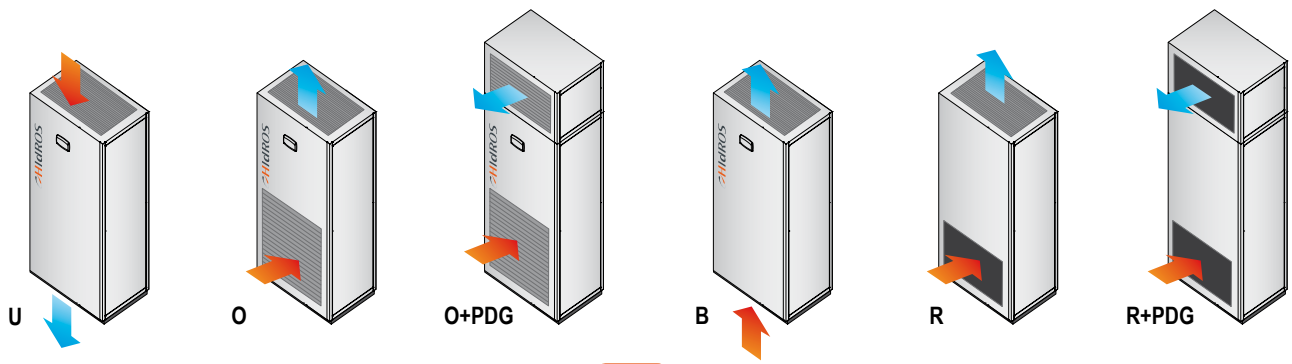
MICROPROCESSOR
Each unit of the DATA CENTER series is equipped with an advanced control, a microprocessor at 16 bit and a FLASH memory to guarantee high speed software performance and the possibility of managing multi-language configuration masks and different serial communication protocols. All the electronic boards can be connected to a local network named pLAN (Local Area Network) that is able to manage 8 units at most. (For more information, see the control service manual). Also, the management of a electronic expansion valve (EEV) is available.

USER INTERFACE
Display the unit conditions, status and operating parameters, with the following characteristics: isplay of room temperature and temperature set-point for supply air, display of operating parameters, control keyboard with two levels of "menù" under "password", alarm reset and unit set-up, on/off safety switch, watchdog function.

CONTROL AND PROTECTION DEVICES
All units are supplied with the following control and protection devices: high pressure switch with manual reset, low pressure switch with automatic reset, high pressure safety valve, compressor thermal overload protection, fans thermal overload protection, probe, air electrical temperature and humidity (option).

WATER COOLED CONDENSERS
Water cooled condensers capacitors are of brazed plate type, made of stainless steel AISI 316 and are factory insulated with closed cell material.

CONFIGURATIONS

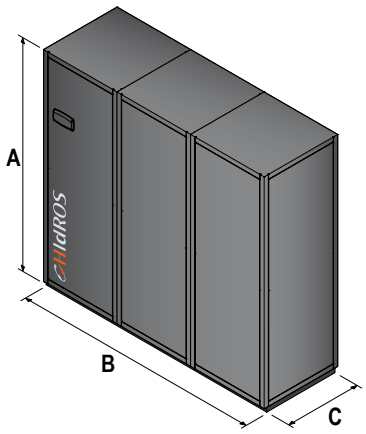


DXW-FR

Description	Code	
Dirty filter alarm	DFA	○
Flooding alarm	FAA	○
Smoke/Fire alarm	SFA	○
Power failure alarm	PFA	○
Water coil + 3-way valve	WCV	○
Capacity step control (hot gas by-pass)	HBP	○
Continuous capacity control (hot gas by-pass + liquid injection)	HBI	○
Sound-insulation caps on compressors	SIC	○
High/low refrigerating pressure gauges	HLM	○
Electronic thermostatic valve	EEV	○
Plenum for air diffusion into environment, with grille (for O/B/R versions only)	PDG	○
Base frame, height adjustable H=300/500 ±25 mm (for U version only)	BFX	○
Base frame, with deflector and height adjustable H=300/500 ±25 mm (for U version only)	BDX	○
Non return air gate, motor-driven (for U version only)	NRG	○
Overpressure type non return air gate (for O/B/R versions only)	ONG	○
RS485 type serial board	SB5	○
Remote control panel	RCP	○
Alarm log clock board	ACB	○
Air discharge temperature sensor	OTS	○
Filter section with F5 grade (according to EN 779)	FF5	○
Filter section with F7 grade (according to EN 779)	FF7	○
2-way pressure valve for tower water	2VT	○
3-way pressure valve for tower water	3VT	●

● Standard, ○ Optional, – Not available

DXW-FR



Mod.	A	B	C	Kg
061	1750	670	500	200
071	1750	670	500	230
091	1750	670	500	240
111	1750	670	500	270
141	1980	770	650	290
161	1980	770	650	345
191	1980	770	650	385
211	1980	770	650	415
261	1980	1280	890	480
321	1980	1280	890	570
401	1980	1680	890	670
501	1980	1680	890	710
262	1980	1280	890	500
322	1980	1280	890	560
402	1980	1680	890	640
452	1980	1680	890	680
482	1980	1680	890	720
582	1980	2060	890	770
652	1980	2060	890	900
752	1980	2580	890	1030
902	1980	2580	890	1095
1002	1980	2580	890	1135

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